# Indiana Statewide 9-1-1 Plan

*March 2013* ©

DOCUMENT CHANGE HISTORY

| Version | Publication Date | Description of Change |
|---|---|---|
| V 0.1 | November 17, 2008 | Final Draft |
| V 1.0 | December 2, 2008 | Final Deliverable as approved by the Board incorporating feedback from the planning committee, the ITA and AT&T |
| V 2.0 | July 2011 | First update. Changes made to all sections to update information. New section created to show progress on the previous Plan's goals. Goals section updated and new goals added. |
| V3.0 | March 2013 | Comprehensive update and overhaul to reflect the new statutory framework. Progress section moved to an appendix. Goals section updated and new goals added. |
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# Mission Statement

The Indiana Statewide Board's mission is to promote the technological advancement of the statewide 9-1-1 system to ensure it is accessible to all callers anytime, anywhere, and from any device; to facilitate communications among Indiana's 9-1-1 stakeholders; and to distribute funding to counties to support them in the delivery of Enhanced 9-1-1 and Next Generation 9-1-1 services to the public.

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# 1. EXECUTIVE SUMMARY

## 1.1. Background and Purpose

Indiana Code §36-8-16.7-27 (a)(8) authorizes the Board to develop and maintain a statewide 9-1-1 plan. This statewide 9-1-1 plan represents the third revision to the plan initially created in 2008, and, like the first plan, involved key stakeholders – Public Safety Answering Points (PSAPs), Board members, the Indiana chapters of National Emergency Number Association (NENA) and Association of Public-Safety Communications Officials (APCO), county commissioners and industry – in the process. A draft of the plan was circulated to other stakeholders for comment prior to finalization.

The purpose of the Indiana Statewide 9-1-1 Plan is:

- Build a cooperative and collaborative mechanism for the advancement of 9-1-1.
- Facilitate the migration of Indiana's PSAPs to Next Generation 9-1-1 (NG9-1-1) capability.
- Educate and inform stakeholders.
- Establish the foundation for taking Indiana's Enhanced 9-1-1 (E9-1-1) capabilities to the next level—by assuring that all Indiana PSAPs achieve a minimum standard level of service statewide and, at the same time, enabling the development of a more comprehensive and technically advanced level of service to meet the evolving needs of consumers.
- Articulate a set of goals and objectives that foster innovation for the advancement of public safety and allow deployment of creative solutions that will maintain Indiana's leadership position.

## 1.2. Goals and Objectives

The Plan identifies the key goals and objectives for improving E9-1-1 service and functionality across Indiana and influences Indiana's statewide decisions concerning E9-1-1. The successful achievement of the Plan's goals and objectives will result in Indiana's ability to continue to meet the public's high level of expectations for 9-1-1 service, provide a consistent level of 9-1-1 service statewide, and contribute to the security and safety of all of Indiana's residents and visitors.

The overarching vision is to assure that Indiana's citizens and visitors have E9-1-1 service no matter where they are calling from, no matter what sort of device they are calling from, regardless of the technology they use and whether they communicate by voice, text or other emerging technology.

- Goal 1—Provide a functionally-comparable level of E9-1-1 service statewide
- Goal 2—Stakeholders and the general public are kept informed
- Goal 3— All PSAPs have adequate funding to meet operational requirements
- Goal 4— Indiana's 9-1-1 system will continue to advance technologically in conformance with national standards

## 1.3. Action Needed to Implement the Plan

Action needed to achieve the Plan's goals and objectives distills down to four broad items:

- Involve stakeholders in the actions and steps associated with work on the Plan's goals and objectives.
- Refine legislation to reflect industry and technological trends, to address broader public policy issues affecting E9-1-1, to meet the evolving needs of PSAPs and public safety agencies, and to resolve ongoing funding issues.
- Develop the capability, in conjunction with the vendor community and E9-1-1 service providers, to assure that Indiana's citizens and visitors have E9-1-1 service no matter where they call from, no matter what wireless device, protocol or service they use, regardless of whether they communicate by voice, text, image or video.

- Increase staffing for the Board to better fulfill its mission of coordinating, supporting and facilitating current and future wireless E9-1-1 services.

# 2. INTRODUCTION

The following represent the purpose of the Indiana Statewide 9-1-1 Plan:

- Build a cooperative and collaborative mechanism for the advancement of statewide E9-1-1
- Facilitate the migration of Indiana's PSAPs to NG9-1-1 capability
- Educate and inform stakeholders about the Board's plans and goals
- Establish the foundation for taking Indiana's E9-1-1 capabilities to the next level—by assuring that all Indiana PSAPs achieve a minimum standard level of service statewide and, at the same time, enabling the development of a more comprehensive and technically advanced level of service to meet the evolving needs of consumers

In updating this plan, the Board assembled a planning committee of stakeholders:

- Mr. Brad Meixell, Clark County E9-1-1 and member of the Board
- Ms. Terri Brooks, White County 9-1-1 and member of the Board
- Mr. Ed Reuter, Bartholomew County 9-1-1 and member of the Board
- Mr. Darin Riney, Deputy Director, Wayne County Emergency Communications
- Ms. Gail Karas, Administrator, Fulton County 9-1-1
- Mr. Gary Bates, Administrator, Howard County 9-1-1
- Mr. Mike Watkins, Administrator, Johnson County 9-1-1
- Mr. Jeff Cicillian, Administrator, Lake County 9-1-1
- Ms. Stephanie Yager, Executive Director County Commissioners Association
- Mr. Craig Bennett, AT&T
- Mr. Eric Hartman, Product Manager, INdigital telecom

The Board's Executive Director, Mr. Barry Ritter, provided invaluable leadership, energy and vision to assemble and coordinate the team.

The Board intends this Plan to be a living document for the use of Indiana's PSAPs, public safety stakeholders, E9-1-1 service providers and policymakers as they work together to advance E9-1-1 services for the benefit of all the citizens and visitors of Indiana.

## 2.1. National Overview of the History and Background of 9-1-1

The history of 9-1-1 in the United States (US) began in 1967. On May 23 of that year, Indiana Congressman, Mr. J. Edward (Ed) Roush recommended a single, nationwide telephone number for reporting fires. That same year, President Johnson's Commission on Law Enforcement and Administration of Criminal Justice recommended a national three-digit emergency telephone number. In November of that year, the Federal Communications Commission (FCC) met with AT&T; and, shortly thereafter, AT&T announced—at a press conference held in the Washington, District of Columbus, office of Indiana Representative Roush—that it had reserved the numbers 9-1-1 for emergency use nationwide.

The Alabama Telephone Company implemented the nation's first 9-1-1 system in Haleyville, Alabama. On February 16, 1968, Alabama Speaker of the House, Mr. Rankin Fite, made the first 9-1-1 call from the Haleyville City Hall. Congressman Mr. Tom Bevill answered the call on a telephone located in the police department.[1]

Early 9-1-1 technology had limited capability and 9-1-1 calls had to be delivered to an answering point within the caller's telephone exchange. Since there was (and is) little correlation between a telephone exchange boundary and the emergency responder's jurisdiction, a 9-1-1 call could end up at a PSAP that did not serve the caller's location. This basic 9-1-1 service, as it has since been defined, did not provide any telephone number or location information with the call—it was a voice service only—and the caller had to provide his or her location and call-back information.

Significant advancement in 9-1-1 technology occurred with the introduction of E9-1-1 in the early 1980s. Using existing circuit-switched technology, E9-1-1 added the capability of selectively routing 9-1-1 calls to the PSAP serving the caller's location and delivering that call with the caller's telephone number and location.

By the 1990s, the use of cellular technology increased dramatically. This consumer-driven change posed serious challenges for public safety, because landline E9-1-1 systems did not have the capability of providing location information for cellular callers.

In 1996, the FCC released its *First Report and Order on Docket 94-102* mandating wireless E9-1-1. The cellular industry devised two solutions to identify the longitude and latitude of the caller's location: a global positioning system (GPS) chip within the handset itself or networked triangulation from cellular towers. Implementation was to occur in two phases: Phase I provided the caller's callback number and the address of the receiving antenna tower; Phase II provided a more accurate latitude/longitude coordinate for the calling device. Phase II accuracy requirements varied depending on technology. The network solution required location to be within 100 meters (328 feet) for 67 percent of calls and 300 meters (984 feet) for 95 percent of calls. The handset solution required location to be within 50 meters (164 feet) for 67 percent of calls and within 150 meters (492 feet) for 95 percent of calls.[2] Although less-than-perfect and inherently less reliable than landline technology, wireless E9-1-1still represents a huge improvement in the PSAP's ability to get help to a wireless caller's location.

Not long after wireless E9-1-1 implementations began to reach maturity at the majority of PSAPs, Voice over Internet Protocol (VoIP), text messaging, picture and video messaging, and other new technologies appeared on the market, adding a host of new issues and challenges for 9-1-1. Consumers have adopted these technologies for their everyday communications and expect to be able to use them to communicate with 9-1-1.

The nation's legacy E9-1-1 system has reached the end of its ability to adapt to new modes of communication, particularly those based on Internet Protocol (IP) or which require greater capacity to transmit the rich data streams and content so integral to modern communications.

In 2004 Congress passed the *ENHANCE 911 Act (the Act) and amended it twice through* the *NET 911 Improvement Act of 2008,* and the *Next Generation 9-1-1 Advancement Act of 2012*.[3] The Act as amended established a National 9-1-1

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1 Alabama Chapter of NENA Website, "World's First 911 Call" <http://www.al911.org/first_call.htm> (April 18, 2008)

2 On September 23, 2010, the Commission issued its Second Report and Order in the Matter of Wireless E911 Location Accuracy Requirements and revised its rules. For handset based solutions, the 150 meter requirement was reduced from 95 percent of all calls to 80 percent of all calls with new benchmarks and exceptions. Network-based requirements remained at 100 meters for 67 percent of calls with new benchmarks and exceptions, and 300 meters for 90 percent of calls with new benchmarks and exceptions.

3 The Next Generation 9-1-1 Advancement Act of 2012 was passed as part of the Middle Class Tax Relief and Job Creation Act of 2012.

Implementation Coordination Office (ICO), or National 9-1-1 Program, as a joint program of the National Telecommunications and Information Administration (NTIA) in the US Department of Commerce and the National Highway Traffic Safety Administration (NHTSA) in the US Department of Transportation (USDOT). It further charged the ICO with managing a grant program and creating a national plan "…for migrating to a national IP-enabled emergency network capable of receiving and responding to all citizen-activated emergency communications and improving information sharing among all emergency response entities." That plan was released in September 2009.

## 2.2. Overview of the History and Background of 9-1-1 in the State of Indiana

On March 1, 1968, just a few days after the first 9-1-1 call in Haleyville, Alabama, AT&T implemented Basic 9-1-1 in Huntington, Indiana. Although no public records exist documenting the exact date or location of the first landline E9-1-1 system in Indiana, New Paris Telephone's records indicate that E9-1-1 began in Elkhart County on November 30, 1987. The 9-1-1 Director at Elkhart County, Ms. Shelia Malone, was an early proponent of E9-1-1, which initially presented automatic number identification (ANI, the caller's telephone number) to the call-taker and later presented automatic location identification (ALI, both the caller's phone number and the civil address). Funding for Elkhart's E9-1-1 system was provided through a property tax made legal by the Indiana state legislature, but all other counties were required to fund 9-1-1 through a fee on monthly phone bills.

In 1988, legislation to provide funding through telephone user fees was enacted, and E9-1-1 was deployed throughout much of Indiana. Enhanced 9-1-1 service was originally provided by Indiana Bell (later Ameritech, then SBC and now AT&T); General Telephone (later Verizon and now Frontier); United Telephone of Indiana (later Sprint, then Embarq and now Century Link).

In 1987, the first cellular systems began to appear, and cellular 9-1-1 calls were typically routed to the closest district post of the Indiana State Police. On February 27, 1998, Indiana became the first state to pass wireless E9-1-1 legislation (*Public Law 98-1998 Section 1*), providing liability parity for wireless carriers and landline carriers, cost recovery for wireless carriers and local governments, and creating the Indiana Wireless E9-1-1 Advisory Board. Governor O'Bannon signed the new law in March 1998. Wireless E9-1-1 fee collections began at the start of the state's fiscal year (July 1998) and the first PSAP payout occurred in October 1998.

According to NENA, the first wireless Phase I E9-1-1 call in the US was made in Allen County, Indiana, on March 31, 1998. The wireless carrier involved was Centennial Communications, the third-party location company was XYPOINT and the telephone provider was GTE Wireless. In November of 2001, Lake County, Indiana, became the second county in the nation to accept Phase II calls.[4]

In 2003, the Indiana legislature enacted legislation to remove the wireless carrier cost recovery provision of the statute and reduce the fee from 65 cents to 50 cents per wireless access line. Other important changes included the creation of an annual equal distribution from the fund to each eligible county in addition to the existing population-based distribution. The legislation also created a technology sub-account that permitted the Board to enter into vendor arrangements, such as the Wireless Direct project, and to plan for future technology applications.

The Board immediately set to work to modernize wireless E9-1-1 service delivery. It hired a consultant to develop a Request for Information (RFI) for a wireless direct network using modern, digital technology and assist with evaluations and vendor

[4] http://www.911dispatch.com/911/history/index.html (last accessed 2/7/2013)

selection. Within 24 months, INdigital telecom (an entity owned by 12 independent Local Exchange Carriers [LECs]) had built a statewide, IP-based network with the potential to provide the NG9-1-1 network backbone for the State of Indiana.
The next major milestone in legislative policy was enacted in 2008 to limit counties to no more than two PSAPs after December 31, 2014. A 2010 change in statute imposed the 9-1-1 fee on prepaid wireless services at the point of sale. In 2012, the Indiana legislature passed major legislation that transformed the Indiana Wireless E9-1-1 Advisory Board into a statewide E9-1-1 Board, and replaced county E9-1-1 fees with a uniform statewide fee to be collected and administered at the state level. The statewide 9-1-1 fee expires July 1, 2015.

# 3. CURRENT 9-1-1 ENVIRONMENT

Indiana has a population of 6,483,802 and 92 counties.[5]

- Approximately one third of Indiana's counties (32 of 92) have a population fewer than 25,000. Of the 32 counties, eight have a population fewer than 10,000.
- Four counties have significant non-English speaking populations. Overall, 5 percent of Indiana's population is non-English speaking and Indiana ranks 22nd in the nation with non-English speaking populations.
- Several counties have senior citizen (aged 65 or older) populations greater than 15 percent.
- The most heavily populated county, Marion, includes the capital city, Indianapolis, the nation's 14th largest city.[6]
- Indiana has 14 Interstate highways.[7] Travelers on these highways contribute a significant portion of the calls made to 9-1-1 from cellular phones.

All of this has an impact on Indiana's 9-1-1 centers and the diversity that this represents places unique demands on Indiana's 9-1-1 systems. Indiana is the transportation crossroads of the Midwest and the extensive interstate highway system contributes a significant portion of the calls made to 9-1-1 from cellular phones.

## 3.1. Current Statutory and Regulatory Environment and Program Structure

### 3.1.1. Indiana's Statutory Provisions for 9-1-1 Service

Title 36, Article 8, Chapter 16.7 of Indiana Code ([IC] 36-8-16.7 Statewide 911 Services) governs enhanced 9-1-1 in the state of Indiana. Title 36, Article 8, Chapter 16.6 (IC 36-8-16.6 Enhanced Prepaid Wireless Telecommunications Service Charge) governs prepaid wireless service in the state of Indiana.

### 3.1.2. Governance

#### *3.1.2.1. Local*

A unit of local government has the authority, but is not required, to establish an E9-1-1 committee or board to provide policy direction and oversight. The mechanism for overseeing and managing a county or municipal 9-1-1 system is typically through a contract between the unit of government and the 9-1-1 system service provider, which may be a LEC or a competitive 9-1-1 service provider. The 9-1-1 service provider provides the network, database, and network monitoring and maintenance services as part of that contract. The governmental unit obtains and maintains the necessary premise hardware and software for its PSAPs through a lease/purchase arrangement with the LEC or through a different competitive procurement. The

[5] http://quickfacts.census.gov/qfd/states/18000.html (last accessed December 6, 2012)
[6] http://voices.yahoo.com/largest-us-cities-population-size-2012-6453656.html?cat=16 (last accessed December 6, 2012)
[7] Indiana Department of Transportation < http://www.in.gov/indot/2337.htm> (last accessed 2/7/2012)

legislation enacted in 2008 limits the number of PSAPs a county can operate. Counties are still in the process of complying with this requirement.
Historically, it has not been typical for counties or municipal units of government to coordinate on a regional basis for the provision of 9-1-1 service with the exception of back-up PSAP arrangements. The deregulation of telephone services by the Indiana Utility Regulatory Commission, combined with the initiatives of the legislature and the availability of a statewide IP-network make such collaboration easier for local authorities. Economic factors and the advent of NG9-1-1 have created an environment where coordination among multiple counties is increasing. Regional consortia have been established for procurement advantages and redundant operational purposes. Many of these counties operate on the statewide Emergency Services IP Network (ESInet) and are fully interoperable.

The delivery of 9-1-1 services to the public is a local matter, although local governments are accountable to the Statewide E9-1-1 Board with regard to how they use their 9-1-1 funds. The State Board of Accounts audits the counties annually.

### *3.1.2.2. State*

The Board is a quasi-state government agency established under the Indiana Treasurer's Office. It has statewide responsibility for the development, implementation, and oversight of the statewide 9-1-1 system. The Board comprises thirteen members:

- The state treasurer or designee, who serves as the Board's chair
- Three PSAP representatives
- One facilities based commercial mobile radio service (CMRS) provider
- One county commissioner
- One sheriff
- Two local exchange carriers
- One VoIP service provider
- One municipal representative
- The state fire marshal or designee
- The superintendent of the state police or designee

The governor makes the appointments based on recommendations made by entities identified in statute. The Board has three employees—an executive director, a program manager and an accountant.

The Board's authority includes:

- Administering the Statewide 9-1-1 Fund (Fund)
- Adjusting the 9-1-1 fee to ensure adequate revenue for the board to fulfill its responsibilities[8]
- Administering the prepaid 9-1-1 fee
- Disbursing 9-1-1 funds to local governments for use as provided by statute
- Contracting
- Rule-making
- Collecting information from the PSAPs

The Board is not required to submit a budget to the legislature, although the budget committee annually audits the Board on its management of the Fund.

[8] The wireless E9-1-1 fee may be adjusted annually upwards or downwards but may not be increased more than ten cents. The current rate is 90 cents per month per subscriber number.

The Board provides a competitively-procured statewide IP backbone network for wireless 9-1-1 (IN911). Performance standards and processes necessary to assure the reliability and continued operation of the IN911 network are established by contract.

Local, regional and state-level system functions relative to the statewide IN911 system are coordinated, mutually supportive, comprehensive in scope and efficient in operation.

Stakeholder input is essential to the Board's oversight function. The composition of the Board itself provides balanced stakeholder representation. In addition, the Board engages its stakeholders and solicits input by the following means:

- Assuring its meetings are publicized and accessible to the public in accordance with the Indiana open-door statutes
- Attending state chapter meetings of NENA and APCO, and supporting their educational initiatives
- Attending National Association of State 9-1-1 Administrators (NASNA), NENA and APCO training and educational meetings to bring back information for Indiana PSAPs
- Presenting at district/state meetings and conferences of elected county officials
- Collaborating with other state agencies, e.g. Indiana Department of Homeland Security (IDHS), Integrated Public Safety Commission (IPSC), State Board of Accounts, Indiana State Police, Department of Revenue and the General Assembly
- Providing technology outreach tools such as the project Website and updates on various social network platforms
- Publishing a stakeholder targeted news feed on the project Website
- Hosting periodic meetings each year for sheriffs, county commissioners, 9-1-1 coordinators and PSAP personnel
- Serving as a clearing house for information about local, regional, state and national wireless E9-1-1 issues

The Statewide 9-1-1 board or the Executive Director may appoint ad-hoc stakeholder committees as necessary to accomplish the goals and objectives of the board. Committees include board members, PSAP officials, local government representatives and industry experts who have experience in a variety of technical, operational and policy subject areas.

The Board's staff collaborates with other state public safety agencies, e.g., IPSC, IDHS, ISP on broader state and national public safety initiatives.

### 3.1.3. Regulatory

IC 8-1-2.6 effectively de-tariffs many of the legacy 9-1-1 system service provider's 9-1-1 product offerings. Nevertheless, these offerings are still treated operationally by the legacy providers as if their tariffs remain in place. Some local authorities have contracted for bundled customer specific offerings similar to what previously existed in tariff, but which are now non-regulated product offerings.

## 3.2. Current 9-1-1 Technology

### 3.2.1. Overview

Four LECs provide 9-1-1 service in Indiana:

- AT&T Indiana
- Century Link
- Frontier
- INdigital telecom

Nine CMRS carriers provide service in Indiana:

| | | |
|---|---|---|
| AT&T Mobility | Verizon Wireless | Revol Wireless |
| Bluegrass Cellular | US Cellular | T-Mobile |
| Cincinnati Bell Wireless | Sprint | Cricket Wireless (a/k/a Leap Wireless) |

It is not known how many VoIP service providers (VSPs) offer service in Indiana, although this will change since new statutory provisions went into effect in mid 2012 requiring providers to coordinate with the Board (IC 36-8-16.7-40 (a)).

### 3.2.2. E9-1-1 Infrastructure

Most, if not all, legacy 9-1-1 system service providers use out-of-band Signaling System 7 (SS7) signaling to transport a 9-1-1 call from the caller's serving Central Office (CO) to the tandem or selective router. From there to the PSAP, the landline 9-1-1 network consists primarily of circuit switched, analog technologies using in-band signaling (centralized automatic message accounting [CAMA]). All legacy 9-1-1 service providers operate ALI database platforms that use IP technology for transport, and then convert to low-speed data transmissions (1,200-to-9,600 baud data lines) if the PSAP premises equipment is not capable of supporting IP ALI links. Increasingly, the network from the ANI/ALI controller to the PSAPs uses IP through the creation of regional ESInets.

#### *3.2.2.1. LEC 9-1-1 Selective Routers*

Among the three major LECs that provide E9-1-1 services, there are currently 16 selective routers, some of which also serve as tandem switches. These are located throughout the state and serve the majority of Indiana PSAPs. Selective routers perform the function of routing an E9-1-1 call to the correct PSAP and are critical components of the existing landline delivery network. Selective routing for 9-1-1 uses the LEC's regional or Local Access and Transport Area (LATA) tandems, which do not operate as mated pairs. Therefore, survivability of the tandem as a selective router relies on survivability of the same switch to provide service for landline calls of all types, including 9-1-1 calls.

Tipton Telephone (doing business as [d/b/a] TDS) serves the PSAP in Tipton County through a hybrid trunking arrangement. AT&T uses three Lucent/Alcatel 5ESS 9-1-1 tandem switches and provides call transfer capability among all AT&T-served PSAPs in Indiana, as well as AT&T-served PSAPs in Kentucky, Michigan and Illinois. Frontier uses multiple Nortel DMS central office-based tandem switches for the selective routing function; these are connected to 12 CML ECS-1000 selective routers, which function as ANI/ALI controllers. Century Link uses one Nortel DMS-500 tandem switch. INdigital telecom uses two mated pair Siemens EWSD class 4 switches and also is utilizing three paired Emergency Services Routing Proxy (ESRP's) for geospatial routing of E9-1-1 voice and non-voice calls using NENA i3 standards.

#### *3.2.2.2. LEC ALI Database*

AT&T-served PSAPs currently receive landline, VoIP, telematics and wireless ALI data via the AT&T regional ALI platform. This ALI platform transports ALI data and selective router Application Programming Interface (API) links over a private, redundant, self-healing IP network. ALI is provided when calls are transferred among AT&T PSAPs statewide, as well as to AT&T-served PSAPs in Michigan and Illinois. The IP ALI data links are converted back to analog circuits if the PSAP premises equipment is not capable of supporting IP ALI links. Frontier-served PSAPs are connected to Verizon's nationwide ALI platform via IP-over-frame relay. Century Link-served PSAPs currently receive landline ALI service via an IP-based national platform. INdigital telecom customers receive ALI via a distributed IP ALI system (INDB).

Certain other PSAPs in Indiana receive landline ALI via local ALI database servers or via IP networking provided as a parallel overlay to the IN911 wireless ALI network. Forty-five PSAPs have enhanced ALI display system capabilities through mapping-based software display extensions created as part of the deployment of the IN911 network or the network of their contracted 9-1-1 system service provider. These PSAPs can display additional information from telematics providers and other emerging technologies directly on the PSAP map platform.

### 3.2.2.3. Wireless Carrier Network

Among the nine CMRS carriers, there are 36 mobile switching centers (MSC) located throughout the Midwest. All 36 of them connect to the two redundant mated-pair tandem selective routers on the IN911 network or to redundant and geo-diverse legacy network gateways (LNG is a NENA i3 NG9-1-1 functional element). From there, calls are selectively routed by the IN911 network and then delivered to the appropriate PSAP either directly or via a functional direct-connect to the network of the PSAP's 9-1-1 system service provider.

### 3.2.2.4. Wireless ALI database

Frontier-served PSAPs currently receive wireless 9-1-1 ALI from the IN911 network. Frontier and IN911 ALI networks are fully integrated using the ALISA interface protocol. Century Link-served PSAPS generally receive all wireless 9-1-1 ALI information directly from the IN911 network, although some Century Link-served PSAPs receive ALI from Century Link due to PSAP equipment limitations. AT&T-served PSAPs currently receive wireless ALI from AT&T's regional ALI platform. This platform supports the transfer of wireless ALI data to all AT&T-served PSAPs statewide and to select PSAPs served by AT&T in Kentucky, Illinois and Michigan. AT&T and INdigital are nearing completion of a functional direct connect, which will interconnect their respective 9-1-1 networks to allow for voice and ALI integration.

### 3.2.2.5. IN911 System

The Indiana E9-1-1 Board provides a single, statewide private E9-1-1 network (IN911 network) to handle 9-1-1 calls from cellular phones.

A self-healing Synchronous Optical Network (SONET) serves as the transport network for a diverse IP-based 'mesh network' that delivers 9-1-1 voice and ALI data using IP technology. Internet Protocol signaling is converted to analog voice and traditional RS-232 data communications to serve legacy equipment in the back room of the local PSAP. The IN911 network is fully redundant at all levels, with redundant, paired selective router tandems and multiple IP-based selective routing services, redundant ALI links and controllers. The underlying IP transport is fully redundant to each PSAP, and the connections to all legacy LEC network elements used for 9-1-1 service are redundant as well. In addition, tertiary connections are being added at critical network points where the unreliability of legacy circuits has been observed. The IN911 network is a fully private network that makes extensive use of IP security protocols and procedures. In addition to these precautions, the network is monitored to automatically detect any operational abnormality. All system circuits are registered with the federal government for Telecommunications Service Priority (TSP).[9]

[9] TSP is a program within the federal Department of Homeland Security (DHS) that authorizes national security and emergency preparedness (NS/EP) organizations to receive priority treatment for the restoration of vital voice and data circuits or other telecommunications services in the event of a widespread outage.

In addition to the redundant nature of the IN911 network design, the Board has implemented tertiary connections from third party service providers. Tertiary connections are added to the 9-1-1 network as high speed broadband networks are established in the PSAP's communities. These connections, where available, are used to connect multiple providers' networks for improved delivery of wireless 9-1-1 calls.

The network is evolving to support additional agencies to promote public safety for Indiana residents and visitors. The Board has extended the IN911 network across state boundaries into Michigan, Ohio and Kentucky to enable wireless call transference across state lines along with the location information associated with the call; interconnectivity with Illinois is in progress.

A system-wide upgrade (Generation 11) was implemented in 2012. Eighteen PSAP's now have the ability to convert 9-1-1 voice calls to text message sessions. Further deployment of the technology will be evaluated by the 9-1-1 board in 2013.

A network application gives all PSAPs access to Language Line for support in handling calls from non-English speaking callers.

#### *3.2.2.6. PSAPs*

There are 144 PSAPs operating within 91 counties.[10] Local E9-1-1 systems established with one of the LECs transport landline and VoIP calls, and the statewide IN911 network transports wireless 9-1-1 calls. County PSAPs are the primary answering points for wireless E9-1-1 calls, which may subsequently be transferred to another PSAP for dispatch. In some instances, wireless 9-1-1 calls are routed directly to the PSAP serving the caller's location, not necessarily the County-level PSAP. These wireless routing profiles are consistent with the legislative intent, (i.e., Colleges and Class II cities). The Indiana State Police (ISP) operates regional dispatch centers throughout the state as secondary PSAPs. ISP PSAPs are served by the IN911 network.

The majority of Indiana's PSAPs use one of several Cassidian Communications (formerly Plant CML) products. A significant number of counties use the Solacom platform. A small minority use equipment from Intrado Positron, Zetron, Emergitech and 911 Inc. The majority of Indiana's PSAPs will have to replace their customer premises equipment (CPE) before they can fully implement NG9-1-1.

There are currently no PSAPs that perform specialized functions based on call type and characteristics, e.g., video calls from the deaf or non-English language.

All counties have enhanced 9-1-1 for landline, VoIP and wireless Phase II with 100 percent of the providers and covering 100 percent of the geography and 100 percent of the population.

## 3.3. PSAP Integration with Emergency Communications, Telecommunictions and Information Networks

At present, many PSAPs function independently of each other. There is limited integration of E9-1-1 and radio systems with one another or with other related or unrelated public safety systems.

[10] Two counties, Fountain and Warren, comprise a single consolidated 9-1-1 operating authority. The number of PSAPs is not stable as counties comply with IC 36-8-16.5—51(c).

INdigital's Indiana Fiber Network backbone carries a network of networks that form a secure ESInet supporting a variety of Public Safety functions, including IN911, connections to the National Crime Information Center/Indiana Data and Communications (NCIC/IDACs), the Automated Fingerprint Identification System (AFIS) and Criminal Justice Information Services (CJIS). In addition, the Board has an IP transport sharing inter-local agreement with the Indiana Supreme Court, Judicial Technology and Automation Committee (JTAC). The IN911 network's functionality is used only for matters directly relating to wireless enhanced 9-1-1 and public safety.

The ESInet serves public safety needs and PSAPs through access to other state agencies, and benefits the public interest through the various inter-local agreements, which thereby reduces the overall cost to the IN911portion of the ESInet. Additional applications related to NG9-1-1 and other related public safety communications functions are under development. Current public policy, statute and regulations govern the development of these services.

## 3.4. Economics

### 3.4.1. Current Funding

Funding for enhanced 9-1-1 services comes from a monthly statewide 9-1-1 fee assessed uniformly on each standard user having a place of primary use in Indiana. A standard user is defined as "a communications service user who pays retrospectively for the service and has an Indiana billing address for the service; and in the case of a non-mobile communications service user, an exchange access facility used in Indiana." A separate 9-1-1 fee is assessed on prepaid wireless services at the point of sale by retailers and remitted to the Indiana Department of Revenue. The current fee on standard users is $.90 and the current fee on prepaid wireless is $.50 per sales transaction. Local government does not have authority to assess a 9-1-1 fee. All fees are remitted to the state and deposited into the statewide 9-1-1 Fund, which is managed by the Board.

The Board has authority to adjust the statewide 9-1-1 fee upward or downward once annually. Adjustments up to $.10 must be reviewed by the state budget committee; adjustments higher than $.10 must be approved by the legislature.

The Board, pursuant to IC §36-8-16.7-37, allocates these funds in the following manner[11]:

- An amount that is equal to the average annual amount distributed to the counties under the prior statutes before their repeal on July 1, 2012 during state fiscal years 2009, 2010 and 2011 (adjusted for Consumer Price Index [CPI])
- The Board retains 10 percent of the revenue for operation of network and administration of the fund
- The remaining funds are distributed as follows:
  - 90 percent to each county based upon its percentage of the state's population
  - 10 percent distributed to each county equally

County governments are required to deposit these receipts a separate account, from which they allocate the funds among their PSAPs to be used for the following purposes:

- The lease, purchase or maintenance of communications service equipment
- Necessary system hardware and software and data base equipment
- Personnel expenses (wages, benefits, training and continuing education) to the extent reasonable and necessary for the provision and maintenance of
- The statewide 9-1-1 system
- A wireline 9-1-1 system funded under IC 36-8-16 (before its repeal on July 1, 2012

[11] Wireless carriers retain $.007 of the fee for the cost of collection and remittance.

- Operational costs (including utilities, maintenance, backup power and backup systems, logging recorders, Board-approved emergency notification systems [for more information about emergency notification systems see IC 36-8-16.7-22, IC 36-8-16.7-38, and IC 36-8-16.7-40])
- Connectivity to the Indiana data and communications system (IDACS)
- Rates charged by 9-1-1 system service providers
- First responder mobile radio equipment
- Up to 50 percent of the costs associated with radio and equipment replacements necessary to comply with the FCC's narrow banding mandate

Funds generated from the 9-1-1 fee may not be used for the construction, purchase, renovation, or furnishing of PSAP buildings; or vehicles.

The Board enforces compliance with the statutory requirements regarding the use of 9-1-1 funds by ensuring the County reimburses the state 9-1-1 fund in the dollar amount of the non-complying expenditure.

### 3.4.2. Next Generation Considerations

In Indiana today, E9-1-1 revenues and costs are relatively straightforward. In a NG9-1-1 environment, there are new costs that may be shared among state and local jurisdictions. The revenues generated by the statewide 9-1-1 fee may not be adequate to cover the costs of NG9-1-1. Further study is needed to quantify the costs and determine how to pay for them.

### 3.4.3. Current Funding Issues

Major funding issues existed before the statutes changed on July 1, 2012. Funding issues include:

- Revenues from landline telephone services are declining as consumers abandon their landline telephones in favor of mobile wireless services.
- Growing popularity of pre-paid wireless plans, which exacerbate the funding shortfall due to the tiered fee structure.
- Some wireless carriers do not remit the 9-1-1 fee for customers that do not subscribe to a voice plan, for example if the handset is used only for text and data messaging.
- Depending on the region, 8 to 30 percent of wireless 9-1-1 calls come from non-service initialized (NSI) handsets, i.e., handsets with no pre-paid minutes or active subscriptions. This class of caller makes no funding contribution to the operation of the 9-1-1 system at all.
- Parts of the state see increases in 9-1-1 call volumes during peak tourism seasons from callers that do not contribute 9-1-1 fees to Indiana; this creates funding distribution irregularities in a state that increasingly relies on tourism as a contributor to the state's overall economy.
- Counties are restricted by property tax caps that limit their ability to increase taxes to pay for public safety. Despite tools provided by General Assembly to local government to increase funding, such as the public safety local option income tax (PSLOIT), they have been reluctant to raise taxes.
- There is no clear statutory provision for assessing the fee on multi-line telephone systems.

Effective public policy must recognize these realities and the statutory framework must assure adequate and sustainable funding to support the continued availability and quality of 9-1-1 throughout the state.

# 4. FUTURE ENVIRONMENT

## 4.1. Vision

The Board and its stakeholder's vision for Indiana is presented in the following statements:

- In the future, Indiana leverages the economies of scale inherent in a single, uniform statewide E9-1-1 infrastructure or interconnected ESInets with equipment and technology to enable processing of all 9-1-1 calls regardless of technology and to enable the seamless transfer of voice and data among PSAPs within Indiana and adjoining states and regions.
- In the future, related statewide public safety services, e.g., poison control, trauma centers, 2-1-1, 5-1-1, NCIC/IDACS, JTAC, are able to exchange voice and data seamlessly with the E9-1-1 system to provide better service to the public in an emergency.
- In the future, the state would operate an E9-1-1 program with adequate authority, staff and funding to coordinate and support the advancement of E9-1-1 and related public safety services statewide; likewise, local governments would have adequate staff and funding resources to provide E9-1-1 service to their respective communities.
- In the future, Indiana's E9-1-1 program would have the ability to seamlessly share data with other state and federal agencies that provide or support emergency services.[12]
- In the future, Indiana's state and local stakeholders evaluate and consider centralized services and applications that are common to all PSAPs where reducing local government costs to provide E9-1-1 service can be achieved within the statutory policy established by the legislature.

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[12] Examples include the Indiana DHS, the State Department of Health, the Federal Emergency Management Agency (FEMA), the DHS and the National Guard.

# 5. 2013-2014 GOALS AND OBJECTIVES

| Goal 1<br>PROVIDE A FUNCTIONALLY COMPARABLE LEVEL OF E9-1-1 SERVICE STATEWIDE | | |
|---|---|---|
| **Objective Number** | **Description** | **Measurement/ Completion Date** |
| 1 | As authorized by IC 36-8-16.7-27 (a)(12) develop and maintain a data collection format and mechanism using the National 9-1-1 Office's Data Dictionary for the national 9-1-1 Profile Database at <https://www.911resourcecenter.org/code/9-1-1ProfileDatabase.aspx,> | Data elements and data gathering mechanism approved by the E9-1-1 Board.<br>*Completion Date: June 30, 2013* |
| 2 | Conduct ongoing phase II location availability and location accuracy measurements testing to establish baseline metrics and identify any areas of improvement that would improve public safety throughout the state | Quantified, data verified Phase II accuracy measurements are available throughout the IN911 network, and reported to the E9-1-1 Board.<br>*Completion Date: December 30, 2014* |
| 3 | Identify minimum training standards | E9-1-1 Board-approved minimum training standards are published.<br>*Completion Date: August 30, 2014* |
| 4 | Develop a policy for handling non-compliance issues | E9-1-1 Board approves a non-compliance policy.<br>*Completion Date: December 30, 2014* |
| 5 | Recommend legislation<br>➢ Provide the Statewide E9-1-1 Board with appropriate authority, funding and staffing to facilitate/coordinate statewide E9-1-1 planning, and provide vendor neutral services and technology.<br>➢ Give the E9-1-1 Board the authority to set aside funds for a grant program for PSAPs<br>➢ Enable interconnectivity between the statewide IN911 system and other E9-1-1 systems and ESInets<br>➢ Public education on the proper use of 911 to protect the integrity of the network<br>➢ Uniform assessment of the statewide 911 fee on Multi Line Telephone Systems (MLTS)<br>➢ Establish minimum technical and operational standards to include call-taker training/certification; staffing; MLTS; the base line level of service for Indiana, e.g., call set up, routing accuracy, which is in alignment with national standards and is vendor neutral<br>➢ Recognize non-voice and provide an appropriate limitation of liability<br>➢ Define a 9-1-1 call | Consensus legislation introduced.<br>*Completion Date:* January 2014 |

Table 1—2013-2014 Goals and Objectives for Goal 1

| GOAL 2<br>STAKEHOLDERS AND THE GENERAL PUBLIC ARE KEPT INFORMED | | |
|---|---|---|
| Objective Number | Description | Measurement/ Completion Date |
| 1 | Expand and improve the mechanism to facilitate PSAP information sharing (information sharing amongst themselves is voluntary) | Notify all PSAPs that the PSAP directors forum on the IN-NENA Website is available to all PSAP directors and deputy directors regardless of membership in NENA<br>*Completion Date: December 28, 2012* |
| 2 | Provide an information clearinghouse of best-practices resources to support county government and PSAPs | Links to national 9-1-1 Resource Center available on E9-1-1 Board Website<br>*Completion Date: June 30, 2013* |

Table 2—2013-2014 Goals and Objectives for Goal 2

| GOAL 3<br>ALL PSAPS HAVE ADEQUATE FUNDING TO MEET OPERATIONAL REQUIREMENTS | | |
|---|---|---|
| Objective Number | Description | Measurement/ Completion Date |
| 1 | The E9-1-1 Board, PSAPs and local governments jointly develop sustainable funding sources for 9-1-1 in conjunction with the state legislature | Consensus legislation introduced for the 2014 session.<br>*Completion Date: June 30, 2015* |
| 2 | Develop a policy for handling funding non-compliance issues | E9-1-1 Board approves the policy.<br>*Completion Date: March 2013* |

Table 3—2013-2014 Goals and Objectives for Goal 3

| GOAL 4<br>INDIANA'S 9-1-1 SYSTEM WILL CONTINUE TO ADVANCE TECHNOLOGICALLY IN CONFORMANCE WITH NATIONAL STANDARDS | | |
|---|---|---|
| Objective Number | Description | Measurement/ Completion Date |
| 1 | Conduct a feasibility study of Indiana's readiness for NG9-1-1 technology implementation at the PSAP and network levels | Feasibility study initiated<br>*Completion Date: June 30, 2013* |
| 2 | Develop a statewide NG9-1-1 deployment plan that meets NENA i3 and other national NG9-1-1 standards for interconnectivity between regional and state ESInets and legacy PSAPs and systems; and which includes a plan for interoperability between diverse networks and service providers at the state, regional and national levels; and is vendor neutral with regard to services and technology. | NG9-1-1 deployment planning committee meets<br>*Completion Date: December 30, 2013* |

Table 4—2011-2013 Goals and Objectives for Goal 4

## 5.1. Action Needed to Achieve the Plan's Goals and Objectives

Action needed to achieve the Plan's goals and objectives includes the following:

- Involve stakeholders in the actions and steps associated with work on the Plan's goals and objectives.
- Refine legislation to reflect industry and technological trends, to address broader public policy issues affecting E9-1-1, to meet the evolving needs of PSAPs and public safety agencies, and to resolve ongoing funding issues.
- Develop the capability, in conjunction with the vendor community and E9-1-1 service providers, to assure that Indiana's citizens and visitors have E9-1-1 service no matter where they call from, no matter what wireless device, protocol or service they use, regardless of whether they communicate by voice, text, image or video.
- Increase staffing for the Board to better fulfill its mission of coordinating, supporting and facilitating current and future wireless E9-1-1 services.

## 5.2. Tracking Progress

The Indiana Statewide 9-1-1 Plan is a living document that is used on an ongoing basis. Indiana's goals are high-level, general directions; and the objectives for achieving the goals are concise, specific and measurable. Each objective has a deadline for completion and an associated metric to measure progress. The Board's staff is responsible for executing the Plan and tracking progress.

As the Board's staff and stakeholders work through each goal's objectives, they will identify and take specific actions/steps necessary to accomplish them. Documentation of actions taken to achieve the Plan's goals and objectives should be adequate benchmarks for use in tracking progress toward each goal.

# 6. RESOURCE ALLOCATION

The Board has only three staff persons: an executive director, a program manager and an accountant. Currently, the Board utilizes a substantial level of contracted resources who are industry experts to help operate the Board.

Immediate staffing needs are for a full-time administrative assistant and technical position. The administrative assistant would provide general administrative and program support. The technical position would help lead Indiana through the NG9-1-1 transition and implementation process. Having these additional resources would enable the Board's executive director to focus more on higher-level functions such as planning, program development and stakeholder engagement.

If the Board requires additional funding, it has the authority to request an increase of the 9-1-1 fee once each year.

# 7. UPDATING THE PLAN

The Board's staff is responsible for executing the Plan and taking the lead in keeping it updated as progress is made. The Board's staff may do this by convening a meeting of the planning committee at least once annually, prior to the Board's last calendar year meeting. The Board's staff, in conjunction with the planning committee, undertakes any major revisions, additions or eliminations of goals and objectives that are necessary. Goals and/or objectives that were successfully implemented are removed from the Plan or, if further work is needed, it remains in the Plan; and new tasks are added for the next year. The Board's staff presents the working group's recommendation for the Board's consideration. The Board reviews the recommendations at its last meeting of the calendar year. Staff executes the updated Plan and the cycle continues.

There may be times when regulatory or technological changes require commensurate changes to the Plan on a schedule outside the routine annual process. In such an event, the Board's executive director takes the lead in coordinating with the stakeholder working group to develop a recommendation for the Board's consideration.

Changes to the plan are documented in the following manner:

- The Plan is given a new version number following the annual review and update cycle, or following any necessary interim update. The number given at that time is a full number, e.g., 1.0, 2.0 etc.
- Any changes made to the Plan on an interim cycle are given a fractional number, e.g., 1.1 or 1.2, etc.
- The date field documents the date the IWAB Board approved the change or, in the case of an interim administrative change, the date of that change.
- The "description of change" field documents the nature of the change and the page and/or section affected.

# 8. MECHANISM FOR INITIATING AND MONITORING AN IMPLEMENTATION PROJECT

## 8.1. Local

E9-1-1 is largely a local service with local oversight. The mechanism for initiating and monitoring an implementation project for landline E9-1-1 services is typically through the serving LEC. Some county and municipal governments may have technical and project management staff, but most do not.

## 8.2. State

The Board relies on contracted services for the initiation and monitoring of projects related to the statewide IN911 network. These services include independent assessment and compliance with recommended industry standards, network expense audits and the enrollment of critical network elements in priority service restoration programs administered at the federal level.

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# 9. ATTACHMENT 1 – 2011- 2013 PLAN STATUS REPORT

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| Goal 1<br>PROVIDE A FUNCTIONALLY COMPARABLE LEVEL OF E9-1-1 SERVICE STATEWIDE | | |
|---|---|---|
| Objective Number | Description | Measurement/ Completion Date |
| 1 | As authorized by IC 36-8-16.7-27 (a)(12) develop and maintain a data collection format and mechanism using the National 9-1-1 Office's Data Dictionary for the national 9-1-1 Profile Database at <https://www.911resourcecenter.org/code/9-1-1ProfileDatabase.aspx,> | Data elements and data gathering mechanism approved by the E9-1-1 Board.<br>*Completion Date: June 30, 2013* |
| 2 | Conduct ongoing phase II location availability and location accuracy measurements testing to establish baseline metrics and identify any areas of improvement that would improve public safety throughout the state | Quantified, data verified phase II accuracy measurements are available throughout the IN911 network, and reported to the E9-1-1 Board.<br>*Completion Date: December 30, 2014* |
| 3 | Identify minimum training requirements | E9-1-1 Board-approved minimum training requirements are published.<br>*Completion Date: August 30, 2014* |
| 4 | Develop a policy for handling non-compliance issues | E9-1-1 Board approves a non-compliance policy.<br>*Completion Date: December 30, 2014* |
| 5 | Recommend legislation<br>➢ Provide the Statewide E9-1-1 Board with appropriate authority, funding and staffing to facilitate/coordinate statewide E9-1-1 planning, and provide vendor neutral services and technology.<br>➢ Give the E9-1-1 Board the authority to set aside funds for a grant program for PSAPs<br>➢ Enable interconnectivity between the statewide IN911 system and other E9-1-1 systems and ESInets<br>➢ Public education on the proper use of 911 to protect the integrity of the network<br>➢ Uniform assessment of the statewide 911 fee on MLTS<br>➢ Establish minimum technical and operational standards to include call-taker training/certification; staffing; Multi Line Telephone Systems (MLTS), the base line level of service for Indiana, e.g., call set up, routing accuracy, which is in alignment with national standards and is vendor neutral; and interoperability operational support on an inter-agency basis<br>➢ Recognize non-voice and provide an appropriate limitation of liability<br>➢ Define a 9-1-1 call | Consensus legislation introduced.<br>*Completion Date: January 2014* |

| GOAL 2<br>STAKEHOLDERS AND THE GENERAL PUBLIC ARE KEPT INFORMED | | |
|---|---|---|
| Objective Number | Description | Measurement/ Completion Date |
| 1 | Expand and improve the mechanism to facilitate PSAP information sharing (amongst themselves) | Notify all PSAPs that the PSAP directors forum on the IN-NENA website is available to all PSAP directors and deputy directors regardless of membership in NENA<br>*Completion Date: December 28, 2012* |
| 2 | Provide an information clearinghouse of best-practices resources to support county government and PSAPs | Links to national 9-1-1 Resource Center available on E9-1-1 Board website<br>*Completion Date: June 30, 2013* |

| GOAL 3<br>ALL PSAPS HAVE ADEQUATE FUNDING TO MEET OPERATIONAL REQUIREMENTS | | |
|---|---|---|
| Objective Number | Description | Measurement/ Completion Date |
| 1 | The E9-1-1 Board, PSAPs and local governments jointly develop sustainable funding sources for 9-1-1 in conjunction with the state legislature | Consensus legislation introduced for the 2014 session.<br>*Completion Date: June 30, 2015* |
| 2 | Develop a best practice policy for handling funding non-compliance issues | E9-1-1 Board approves the policy.<br>*Completion Date: February 2013* |

| GOAL 4<br>INDIANA'S 9-1-1 SYSTEM WILL CONTINUE TO ADVANCE TECHNOLOGICALLY IN CONFORMANCE WITH NATIONAL STANDARDS | | |
|---|---|---|
| Objective Number | Description | Measurement/ Completion Date |
| 1 | Conduct a feasibility study of Indiana's readiness for NG9-1-1 technology implementation at the PSAP and network levels | Feasibility study initiated<br>*Completion Date: June 30, 2013* |
| 2 | Develop a statewide NG9-1-1 deployment plan that meets NENA i3 and other national NG9-1-1 standards for interconnectivity between regional and state ESInets and legacy PSAPs and systems; and which includes a plan for interoperability between diverse networks and service providers at the state, regional and national levels; and is vendor neutral with regard to services and technology. | NG9-1-1 deployment planning committee meets<br>*Completion Date: December 30, 2013* |